

CLAIMS

CLAIMS: Please amend the claims according to the status designations in the following list, which contains all claims that were ever in the application, with the text of all active claims.

1-14 (CANCELED)

15. (CURRENTLY AMENDED) A passively still-air insulated and electrically actively warmed disposable outlet patient flow line system for in-line blood/fluid warmers comprising:

A.) a flexible tube flow line made of polyvinyl chloride or other resinous material has a central blood-carrying tube about 0.12 inch inside diameter and a wall thickness of about 0.04 inch, and is supported inside a larger tube which is co-extruded with said central tube and has an outside diameter of about 0.37 inch and a wall thickness of about 0.04 inch, said central and outer tubes being interconnected by co-extruded webs about 0.04 inch thick which appear in cross section as a planar diametrical web across the entire cross section with the exception of said central tube's

lumen, wherein an annular space between said central and outer tubes is filled with heat insulative still air,

B.) said flexible tube flow line having an inlet end adapted to connect to the warm blood outlet of an in-line blood warmer apparatus and an outlet end adapted to a patient intravenous site,

C.) a flexible elongated electrical resistance heater segment located within each half of said annular air space,

D.) said flexible elongated electrical resistance heater segments extending in length from about one half to nine tenths the length of said flexible tube flow line, and extending all the way to said outlet end of said flow line,

E.) said flexible elongated electrical resistance heater segments being electrically and mechanically joined together at said outlet end of said flexible tube flow line forming a series electrical resistance heater,

F.) the two proximal ends of said flexible elongated electrical resistance heater segments being electrically and mechanically adapted to be

removably connected to a temperature controller located in said blood warmer apparatus,

G.) said flexible elongated electrical resistance heater segments being maintained at a controlled temperature of about 42C ~~by said temperature controller mounted inside said blood warmer apparatus,~~

whereby convective heat loss to cooler ambient air is replaced and blood is maintained at normothermic temperature near 42C while passing slowly at very low flow rates through said patient flow line system to the patient's i.v. site.

16. (PREVIOUSLY PRESENTED) A system according to claim 15 wherein said flexible elongated electrical resistance heater segment is a bare metal wire about 0.001 inch to 0.010 inch in diameter.

17. (PREVIOUSLY PRESENTED) A system according to claim 15 wherein said flexible elongated electrical resistance heater segment is a bare metal ribbon about 0.0005 to 0.003 inch thick and about 0.10 to 0.30 inch wide.

18. (PREVIOUSLY PRESENTED) A system according to claim 15 wherein said flexible elongated electrical resistance heater segment is made of insulated wire.

19. (PREVIOUSLY PRESENTED) A system according to claim 15 wherein said flexible elongated electrical resistance heater segment is made of a metal with a high temperature coefficient of resistance such as nickel or an alloy such as 70% Nickel, 30% Iron.

20. (PREVIOUSLY PRESENTED) A system according to claim 16 wherein said flexible elongated electrical resistance heater segments are made by winding said wire in a tightly spaced helical form on elongated rods or tubes about 0.1 inches in diameter,

A.) said elongated rods or tubes being made of a flexible insulator such as plastic, whereby a much longer length of wire and much larger heat transfer area may be achieved.

21. (PREVIOUSLY PRESENTED) A system according to claim 16 wherein said flexible elongated electrical resistance heater segments are made by winding said wire in a tightly spaced quasi helical form on elongated, flexible strip shaped insulators about 0.03 inch thick and about 0.10 to 0.25 inch wide, whereby a much longer length of wire and much larger heat transfer area may be achieved.